CLAIMS:

1. An electron gun of the in-line type, comprising:

cathodes (2) for emitting electrons, which cathodes are juxtaposed in a first direction, and

a main lens section (4) comprising at least two electrodes (10, 11, 12), whereby a gap is provided between adjacent electrodes, a gap-facing end of an electrode comprising an electrode rim,

characterized in that at least one of the electrodes (10, 11, 12) comprises a plate-shaped element (14, 19) arranged inside the electrode, said element being provided with a common aperture for passing electrons from each cathode, a dimension of said aperture in a second direction being smaller than a cross-section diameter of said rim in the second direction, the second direction being perpendicular to both the first direction and a central axis of the electron gun.

2. Electron gun according to claim 1, wherein, for said at least one of the electrodes (10, 11, 12), a distance along the central axis from the gap to the plate-shaped element (14, 19) is smaller than the dimension of said aperture in the second direction.

3. Electron gun according to claim 1, wherein the electrodes of the main lens section each comprise at least one plate-shaped element arranged on the inside of the electrode, said plate-shaped element being one of

a first type of plate-shaped element (14, 19) being provided with a common aperture for passing electrons from each cathode, and

a second type of plate-shaped element (15, 16, 18) being provided with a number of apertures, each aperture corresponding to a cathode for passing electrons from said cathode only,

wherein said plate-shaped element in said at least one of the electrodes (20, 21, 22) is a plate-shaped element of the first type.

4. Electron gun according to claim 3, wherein the main lens section comprises two electrodes (41, 43) defining, in operation, a bi-potential main lens,

wherein an electrode (41) receiving a lower voltage (Vdyn) is provided with a plate-shaped element of the second type (42), and an electrode (43) receiving a higher voltage (Va) is provided with a plate-shaped element of the first type.

5. Electron gun according to claim 3, wherein the main lens section comprises three electrodes (10, 11, 12) defining, in operation, a Dynamic Composes Field Lens (DCFL)-type main lens,

wherein an electrode (10) receiving a lower voltage (Vdyn) is provided with a plate-shaped element of the first type (14),

an electrode (11) receiving an intermediate voltage (Vi) is provided with a plate-shaped element (16) of the second type, and

an electrode (12) receiving a higher voltage (Va) is provided with a plate-shaped element (19) of the first type.

6. Electron gun according to claim 4 or 5, wherein an electrode provided with a plate-shaped element of the first type does not include a plate-shaped element of the second type.

7. Electron gun according to claim 1, wherein the aperture in the plate-shaped element (70) of said at least one of the electrodes is barrel-shaped.

8. Electron gun according to claim 3, wherein the aperture in the plate-shaped element (70) of the first type is barrel-shaped.

9. Electron gun according to claim 1, wherein a dimension of the aperture in the first direction is at least 75 % of a cross-section diameter of the electrode rim in the first direction.

10. Electron gun according to claim 1, wherein a dimension of the aperture in the second direction is at least 25 % of a largest cross-section diameter of the electrode rim in the second direction.